Fig. 1

PRIOR ART

Fig. 2

PRIOR ART

Fig. 3

301 — Image sensor

vsync
hsync
pixel_clk
pixel_data

302

304 — Sensor signal processor

vsync_1
hsync_1
pixel_clk_1
pattern
pixel_data_1

303 — Image processor

vsync_2
vsync 2
Ycbor, YUV

image processor

width
height

305 — Sensor type register

306 — Micom

GPIO

Sensor interface

Fig. 4a

Sensor signal register

401

| b7	b6	b5	b4	b3	b2	b1	b0
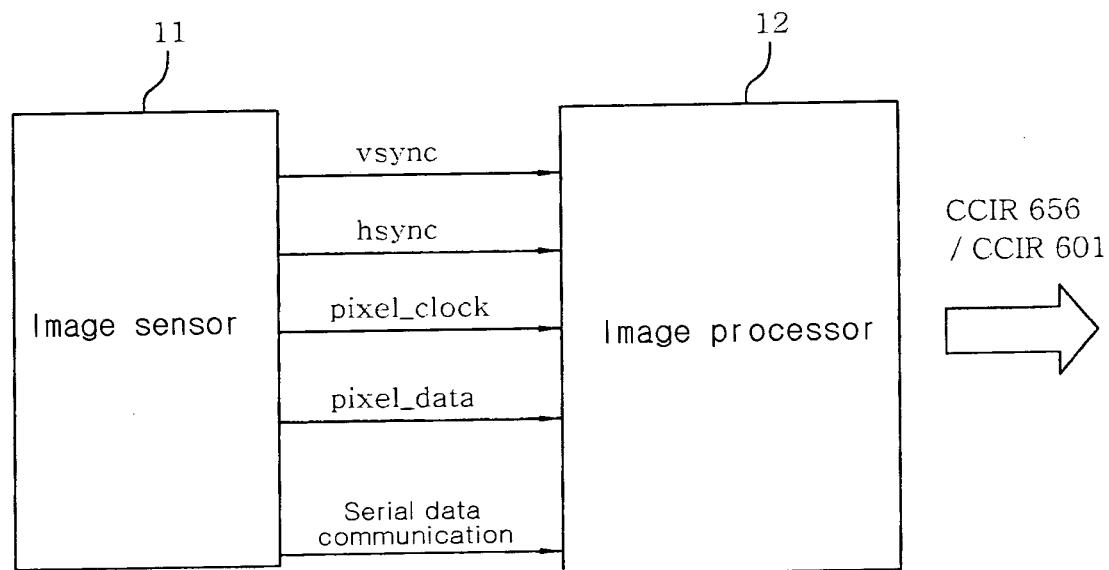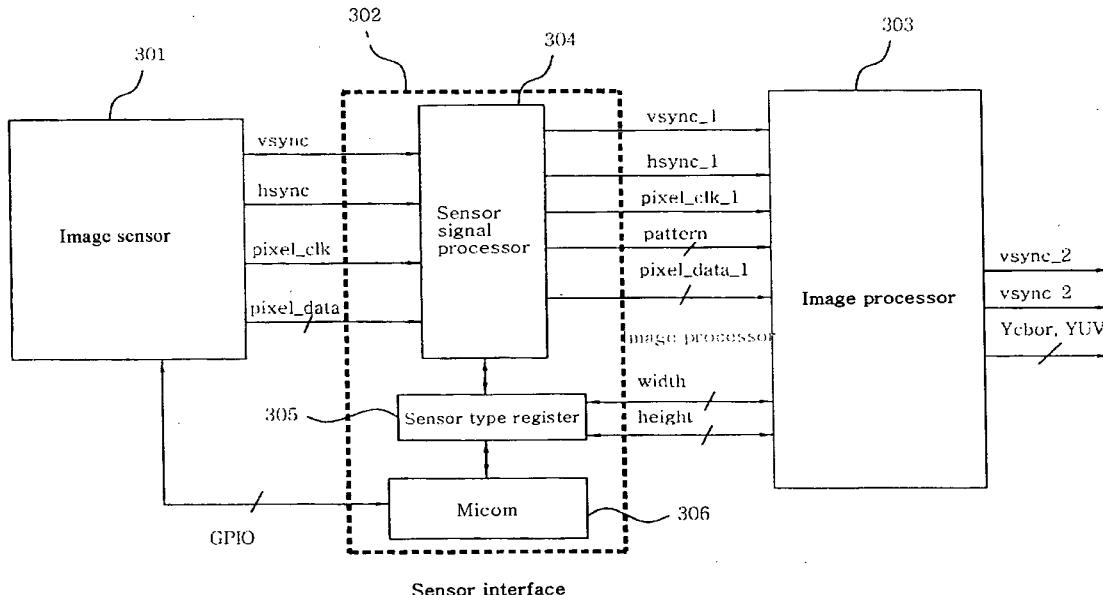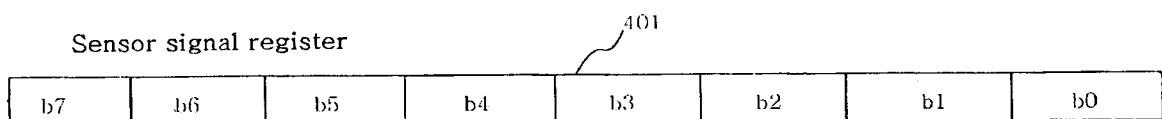
[b1: b0] : Interpolation pattern
b2: : Polarity of pixel clock signal
b3: : Polarity of vertical synchronization signal vsync
b4: : Polarity of horizontal synchronization signal hsync
b5: : ISP mode
[b7: b6] : not assigned

Fig. 4b

Horizontal size register

402

b15	b14	....	b2	b1	b0

Fig. 4C

Vertical size register

b15	b14	....	.	b2	b1	b0

403

Fig. 5

Fig. 6

vsync_1

hsync_1

pixel_clk_1 → **Line buffer** (601) ⟹ **Interpolation** (602) ⟹ **proceColorssing** (603) → pixel_data2

pattern

pixel_data1

pixel_data

vsync_2

hsync_2 → **Ycbcr, YUV Formatter** (605)

Ycbcr, YUV, MPEG, JPEG

i_vsync

i_hsync

i_pixel_clock

(604) (606)

height

width

Sensor type register — 305
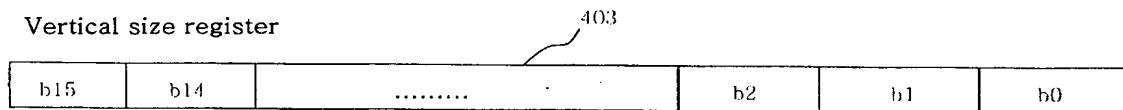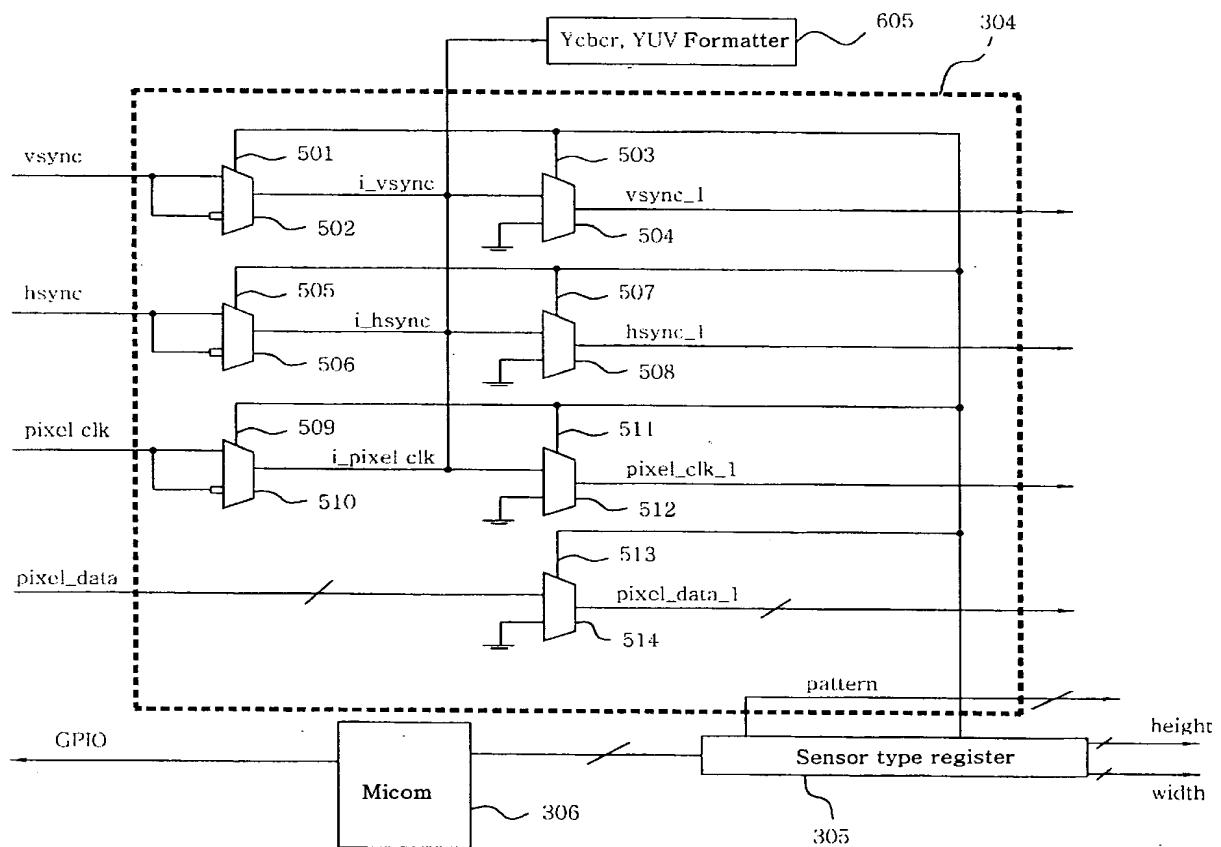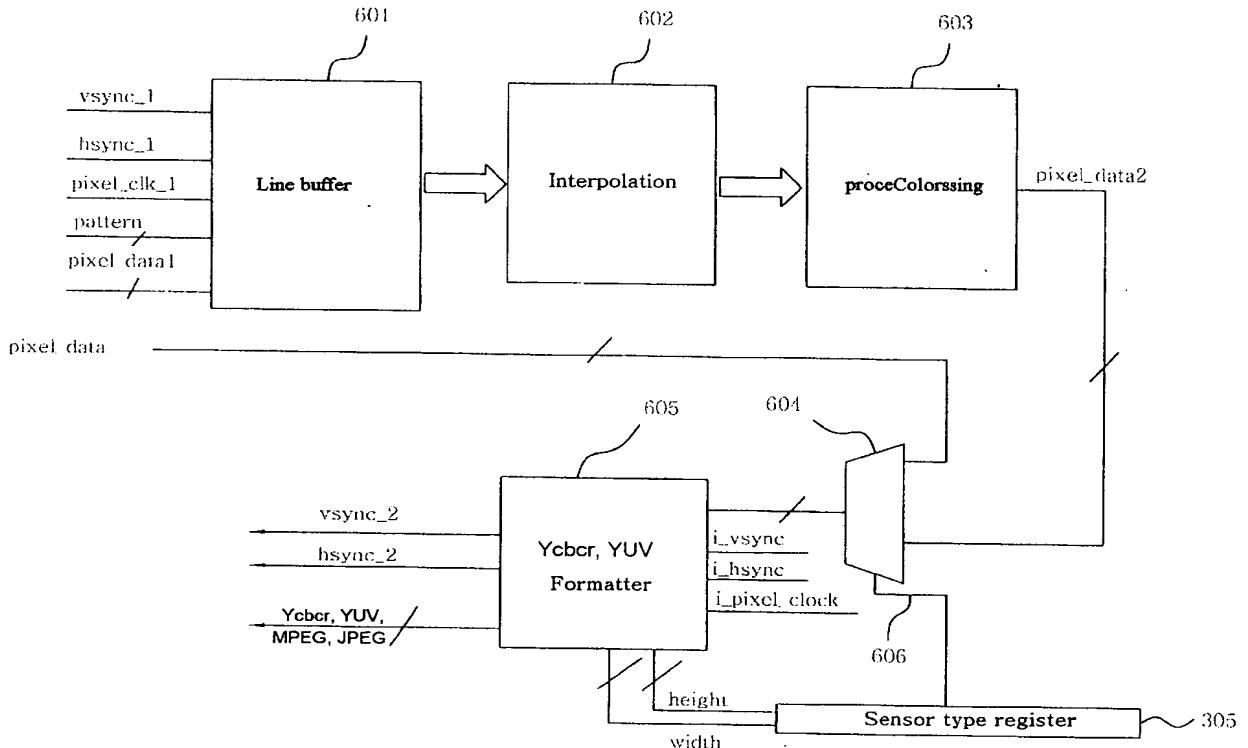
Fig. 7

Sensor	Vsync	Hsync	Pclk	Data Format	Size	Resolution	Active Pixel size	Control method
AU-60A(Hynics)	high	high	posedge	CbYCrY	1/4 inch	VGA	652x488	I2C
TCM8210MD(Toshiba)	high	high	negedge	UYVY	1/4 inch	VGA	660x492	I2C
OV7648 (Omnivision)	low	high	posedge	UYVY	1/4 inch	VGA	640x480	Serial SCCB
OV7635 (Omnivision)	low	high	posedge	UYVY	1/4 inch	VGA	640x480	Serial SCCB
HV7131G (Hynics)	low	high	posedge	BGBG ⋯ GRGR	1/4 inch	VGA	652x488	I2C
PVO430DC (Pixelplus)	low	high	negedge	UYVY	1/4.5 inch	VGA	640x480	I2C
ZR32312(Zoran)	high	high	posedge	BGBG⋯GRGR	1/3.4 inch	SXGA	1288x968	I2C(SMBUS)
Bi8831 (Biomorphic)	high	high	posedge	GRGR⋯BGBG	1/3 inch	SXGA	1296x1040	3-wire serial int.
LZOP3721(Sharp)	high	high	posedge	UYVY	1/4 inch	SXGA	1172x896	I2C
OV9620(OmniVision)	low	high	negedge	BGBG⋯GRGR	1/2 inch	SXGA	1280x1024	Serial SCCB
MCM20027(Motorola)	posedge	vclock low	posedge	GRGR ⋯ BGBG	1/2 inch	SXGA	1280x1024	I2C
PT20503 (PICTOS)	high	high	posedge	GRGR⋯ BGBG		SXGA	1280x920	2wire serial int.
PO1130K	low	high	negedge	UYVY(CbYCrY)		SXGA	1280x1024	I2C